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Note

ARGUMENTS FOR THE NEED FOR STATUTORY SOLUTIONS TO THE COPYRIGHT PROBLEM PRESENTED BY RAM COPIES MADE DURING WEB BROWSING

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***98** Observe always that everything is the result of a change, and get used to thinking that there is nothing Nature loves so well as to change existing forms and to make new ones like them.

—MARCUS AURELIUS ANTONIUS, MEDITATIONS

I. Introduction

A. It's a Brave New World

If everything is the result of change, then human history is one long series of humankind's attempts to adapt to change. We search for familiar patterns and are comforted by Marcus Aurelius' assertion that, constant as change is, the new is really only the old in a different form. Accordingly, as we now confront what some consider to be a social and political revolution even greater than that caused ***99** by the invention of the printing press,[1] we search for familiar patterns to help us know how to deal with the changes caused by the revolution. We attempt to poke through the new forms, hoping to find only the familiar old hiding therein.

The "information revolution," however, presents intellectual property law with a world whose very basis is substantially different from that of the world with which we are familiar. The Internet is the central force of this revolution. The language

that has developed in dealing with the Internet reveals how distinctly different the world it represents is from the world we are used to: the world is different—cyberworld" versus "brick-and-mortar world"; its inhabitants are different—"netizen" versus "citizen"; and their communication channels are different—"e-mail" versus "snail mail."

More than that, this new world changes so rapidly that so soon as we work through a major quandary, we find that the question itself has changed. It is difficult to know with certainty, or even to guess, how to deal with those changes. We may not fear change itself so much as fear that we will not be able to correctly deal with it the first time around, and that, given the rapid pace of change in the cyberworld, the second time around will be too late. So we attempt to find familiar patterns to analogize the cyberworld to the "brick-and-mortar" world.

For example, we say that e-mail is like a cross between a phone conversation and "snail mail." But this is not entirely accurate. E-mail is more ephemeral, less formal, and often less well-thought-out than "snail mail," but more permanent, more formal, and often more well-thought-out than phone conversations. We say that chat rooms are like old-time community gatherings: safe places to meet strangers. But they are not. While we use chat rooms anonymously to protect ourselves, so can the people we "meet" there, thus making it more difficult to judge who those people actually are.

We say that browsing the Web is like being in a huge book or record store, with the ability to flip through millions of books and picture albums and to listen to millions of songs from our desktops. But the very ease and convenience with which we can access all that information on the Internet demonstrates how thoroughly the Internet changes the world of information and the roles of players in that world. Browsing the Web is not like flipping through a book in the bookstore, for any number of reasons. Two examples, which may have the greatest implications for intellectual property law, are the following:

A user flips through a book with the goal of deciding whether to purchase it. In contrast, with Web browsing, once a user is viewing a page that he accessed for ***100** free (picking up the book from the shelf), he can read—and even copy and distribute copies of—the entire thing without having to purchase it.

When a user accesses a Web page, a copy of that page is created in his computer's RAM, and it is the copy that he actually views. In contrast, when a user picks up a book from the shelf in a bookstore, he views that copy, not a photocopy of the entire book that magically is made when he picks up the book.

B. What the Brave New World Means for Copyright Law

Although there is great debate on what to do about the situation, there is little argument that intellectual property law will play a critical role in the development of the cyberworld and its effects on society. Copyright in this context has received a particularly large amount of attention, including the two-year struggle in Congress to pass the Digital Millennium Copyright Act and scores of law review articles. However, despite the level of uncertainty, we have so little case law as to be dangerous.

Among the many other concerns sparked by the information revolution— including economic concerns created by e-commerce capabilities and concerns about our children's safety from exposure to pornography and to those who would undermine their privacy for a price—is how significant copyright is for anyone other than the traditional publishers and authors who are threatened with significant financial loss if they cannot keep up in the cyberworld. Indeed, the information revolution has made copyright an important part of daily life for millions of individuals in modern society. Professor Litman argues convincingly that "our copyright policy is becoming our information policy."[2] In a world in which our economy, social interactions, and even social mores increasingly are driven by the information revolution, Professor Elkin-Koren's claim that "the future of copyright law in cyberspace is crucial to democracy"[3] does not seem like an exaggeration.

If using information in cyberspace is so different from using information in the brick-and-mortar world, will our current copyright laws be sufficient in regulating the cyberworld? Are our goals even the same for information in cyberspace? Should they be? Should authors have the same exclusive copyrights in cyberspace? Or should those rights be more restricted or narrowly defined? In the very few years in which the Internet has played a major role in our society, these questions have generated hundreds of academic discussions and papers. A part of the reason they are so difficult to answer is that the new cyberworld is fundamentally different in ways that significantly implicate our legal system.

This paper will focus on one of the most significant differences and its implications for our copyright law system, which is dealing with copies created in a ***101** user's computer RAM when he browses the World Wide Web. It is the most significant

difference because of both its basic role in using the Web and its central role in modern copyright law. Although the creation of these copies is an inherent function of, and unavoidable part of, the Web browsing process, courts have held that RAM copies may infringe a copyright owner's reproduction right,[4] a holding that mostly effects users of freely-accessible Web pages. Increasingly, commercial providers of Web pages are restricting access to their pages, often to charge money for access or to gather information about their users. This paper is concerned not with the user who purposely circumvents a restricted page, but with the casual browser who might be attacked for simply browsing the "open" Web.

Part II of this paper provides a brief explanation of how the World Wide Web works and why this is important for copyright purposes. It reviews the holding of *MAI Systems Corp. v. Peak Computer Inc.*,[5] in which the Ninth Circuit held that a copy in RAM is permanent enough to be considered fixed in a tangible medium and thus may constitute an infringing copy,[6] despite the fact that RAM is intended to be, and generally is thought of as, temporary storage. Part II continues by reviewing *Intellectual Reserve, Inc. v. Utah Lighthouse Ministry, Inc.*,[7] the first case to use the *MAI* holding to find individual Web users to be infringing copyright. This part also discusses the potential implications for end-users of the World Wide Web.

Part III argues that the right to control the making of RAM copies resulting from browsing the World Wide Web is not a right that should be accorded to copyright owners. Specifically, it explores the original purpose of the reproduction right, pre-cyberworld, including examining various theories of intellectual property. Finally, Part III explains why current defenses, including fair use, implied license, and Section 117 of the Copyright Act, are not sufficient to address the problem.

Part IV examines licensing and technological controls that are being used as alternatives to copyright for protecting intellectual property. This part argues that these copyright alternatives can and sometimes do create the same problems created by protecting RAM copies.

*102 II. The Current Situation and the Problem

A. How the World Wide Web Works and the Role Played by RAM

Reduced to its most basic form, the Internet is a "network of networks" that allows millions of computers around the world, from Big Blues to personal computers, to access each other. The World Wide Web is a tool for viewing information available on the Internet. A few Internet generations ago (less than ten human years), the Web, like everything else on the Internet, was text-based. When technology advanced to the point at which graphical browsers were introduced, use of the Web as an information access tool virtually exploded. In 1992, there were fifty Web servers (computers storing information that could be accessed by other computers on the network) worldwide.[8] In 1993 and 1994, the first two graphical browsers, Mosaic and Netscape, were introduced.[9] By 1995, the number of Web servers had increased to approximately 73,500.[10] The number of users in 1995, estimated at twenty-six million,[11] had increased dramatically to an estimated 275 million by February of 2000.[12]

When a user accesses a World Wide Web page, the server on which that page resides breaks the page into several "packets," each containing some of the information from that page, and sends them to the user's computer, where the packets are reassembled so that the user can view the page. In the process of reassembling, a copy of the page is made in the receiving computer's random access memory, or RAM. RAM is intended to be a short-term storage memory; it exists physically separate from the hard drive of a computer. When a user views a World Wide Web page, he is actually viewing the copy made in his computer's RAM, not the copy resident on the remote server. However, RAM is only temporary; when a computer is turned off or an application is closed, any data in RAM will be lost. To keep a permanent copy of the information, it must be saved to a long-term storage device, such as a hard drive, floppy disk, or CD.

It is important to understand what RAM is, because it actually contains an image of whatever Web page is being viewed at any given time. Thus, if the image meets the definition of "copy" in the Copyright Act, and the use meets the right conditions, the reproduction right of the copyright owner may be infringed. The possibility of infringing copyright simply by browsing the Web has huge ***103** implications for the users of the World Wide Web. Arguably, to hold browsing to be an infringement would create rights not heretofore given to copyright owners.[13]

Given that the copy made in RAM when browsing the Web is simply a function of browsing the Web, is it possible that courts would hold this copy to be a copyright infringement? While that specific question has not yet been answered, much consternation exists in the intellectual property community due to a Ninth Circuit holding that some RAM copies may

infringe copyright.[14]

B. *MAI Systems Corp. v. Peak Computer, Inc.*

The holding in *MAI Systems Corp. v. Peak Computer, Inc.*[15] worries many members of the legal profession who practice "cyberlaw." Others argue that *MAI* has no bearing on the cyberworld per se (although this argument is losing ground due to a very recent holding in *Intellectual Reserve, Inc. v. Utah Lighthouse Ministry, Inc.*[16] applying *MAI* to the Web browsing context[17]). This debate is a reaction to the Ninth Circuit's holding that copies in RAM may constitute infringement of a copyright owner's reproduction right.[18]

Although *MAI* concerned use of proprietary software, not the World Wide Web, *Intellectual Reserve*'s application of *MAI* to the act of Web browsing potentially puts every Web user literally on the defensive. Thus, copyright commentators argue that steps must be taken to ensure that such holdings do not become well-established law.[19]

MAI Systems produced both computers and the software necessary to run them, including operating system software.[20] Peak, a software maintenance company, maintained MAI computers for over one hundred Peak clients.[21] Approximately six months before the suit ensued, four MAI employees left MAI to work for Peak.[22] MAI's copyright claim was based on Peak's provision of service to a customer's machine that ran on the MAI operating system. To maintain the ***104** machine, the defendant turned it on, thereby making a copy of part of the operating system in the computer's RAM, on which the defendant was then able to view an error log indicating the problem.[23] MAI argued that this copy infringed its copyright in the operating system because, since Peak was not licensed to use the software, any copies it created were unauthorized.[24]

Peak argued that no copy was made according to the definition in the Copyright Act because a copy made in RAM does not meet the fixation requirement.[25] The court held that the RAM copy did meet the definition of "copy" in the Copyright Act by focusing on the error log used by the technician, which, according to the court, demonstrated that the copy in RAM could be "perceived, reproduced, or otherwise communicated."[26] The court made this holding despite its recognition that previous cases on which it relied were "somewhat troubling since they do not specify that a copy is created regardless of whether the software is loaded into a RAM [or more long-term storage]."[27]

C. *Intellectual Reserve, Inc. v. Utah Lighthouse Ministry, Inc.* and Other Cases in the Cyber Environment that Follow MAI

Many commentators agree that the *MAI* decision is too extreme when applied to the Web.[28] Some have argued that the decision is a valid interpretation of the Copyright Act, but that its results are "inequitable, impractical, and nonsensical,"[29] and that the decision does not promote the policies underlying the Copyright Act.[30] One author provides support for the "nonsensical" nature of the holding by pointing out that Peak could have gotten around making an infringing copy simply by having an employee of its client, who would have been licensed to use the software, turn on the computer.[31] It does not seem to be a great leap to suggest that *MAI* was actually more concerned with business competition than intellectual property rights; in fact, copyright misuse has been argued as a defense, though unsuccessfully, in two cases similar to *MAI*.[32] Finally, in arguing that *MAI* was ***105** more about business competition than intellectual property rights, a particularly critical commentator argues that a case "should be analyzed with reference to its place in the development of our law and society. In its desire to punish Peak's misdeeds, the Ninth Circuit may have reached a decision before examining its longterm consequences."[33]

Despite strong arguments that the *MAI* holding should not be applied to RAM copies made while browsing the Web, serious concern is justified by actions already taken by several courts. Courts have relied upon *MAI* in finding infringement in a variety of cyber-situations. Several cases have cited *MAI* in finding that RAM copies made during Web use meet the fixation requirement.[34] Most of these cases, however, involve the specific and intentional transfer of copyrighted images or works, in which the end-user downloads a copy of the work into permanent storage. These cases use the RAM argument in targeting the unauthorized distributor of the works. Only one case to date has applied *MAI* to the end-user browsing the Web.

In *Intellectual Reserve, Inc. v. Utah Lighthouse Ministry, Inc.*,[35] defendants placed portions of plaintiff's copyrighted works on their Web page. When plaintiff ordered defendants to remove the works, they did so but replaced them with a notice that the work was available elsewhere on the Web, gave URLs for those sites, and posted e-mails on their page encouraging users

to go to those sites to access the works.[36] Plaintiff then sued for contributory infringement.[37] The court awarded a preliminary injunction to the plaintiff and, relying on *MAI*, specifically stated that, in making a RAM copy while browsing, "the person who browsed infringes the copyright."[38] Although end-users were not parties to the action, the court's targeting of the simple behavior of browsing is potentially quite dangerous. The court has set the precedent that browsing the Web infringes the reproduction right when the user accesses pages containing infringing material.[39]

***106** At the heart of the problem is the fact that the Internet is so substantially different from the technology existing in 1976 that the Copyright Act simply does not fit the cyberworld, regardless of the best intentions on the part of the Ninety-Fifth Congress to write a law encompassing technology "now known or later developed."[40]

When a garment does not fit, we take it to a tailor, try it on, and ask what can be done. If the tailor is good and we trust her opinion, we follow her advice. If she says that nothing can be done to make it fit, we take the garment to Goodwill and then go back to the mall for a replacement. Our current problem is that there is no tailor to whom we can show the garment of copyright law as worn by the Internet. We are the tailors, and we are learning by doing. We are so well aware of this that we are frightened by this process, and rightfully so. We are forced to rip seams and resew them, to replace zippers with buttons, perhaps to change the entire style of the garment, without being able to foresee the final fit.

The *MAI* decision scares us, because it was not made in the context of the cyberworld, which is why cyberlaw has been slow to rely on it. One case at a time, however, the courts rely on *MAI* to an increasingly frightening degree. When work on this paper was begun, courts had applied *MAI* to limited Web activities, but not to Web browsing; three months later, as I complete it, the District Court of Utah has done just this. We cannot predict what will happen if courts continue to build on this trend, although we know that, whichever direction they may go, the results will be vital to defining copyright law in cyberspace.

D. How Serious is the Problem?

How serious will it be if a copyright owner claims infringement of her right of reproduction based on a RAM copy made when a Web user simply views her material on the Web? After all, *MAI* did not destroy the computer maintenance industry. Does a holding that a copyright may be infringed by a RAM copy produced during Web browsing have major ramifications for use of the Web?

For the "casual" Web surfer with whom this paper is concerned, as opposed to a user who purposely attempts to circumvent controlled access to Web pages, two major dangers are present. The first is the possibility that a copyright owner would use this right to prevent otherwise allowable uses of her page. Plaintiffs already are experimenting with using copyright to restrict specific uses of their pages by others, such as framing[41] or deep linking.[42] Those issues are somewhat more complicated than the issue of RAM copies made during browsing, and they bring in issues other than reproduction, such as the creation of derivative works. Arguably, ***107** however, the situations are similar: the copyright owner tries to use her copyright protection to go beyond the intended reaches of copyright law by attempting to control access to her work, rather than uses of it.

The second danger is the use of such a right to target individual users in situations like that in *Intellectual Reserve*, in which the "deep pockets" defendant encourages the individual user to access infringing works on the Web and is charged with contributory infringement, sweeping up individual users in the contributory path; in order to hold the "deep pockets" defendant liable, the individual users must be held to be violating copyright. In *Intellectual Reserve*, the plaintiff did not go after individual users. However, in a different scenario, one involving downloading infringing copies of musical works, rap singer Dr. Dre has threatened to add individual users as defendants in his suit against the Internet company providing access to the infringing works.[43] The targeted users are university students, who in all probability have rather shallow pockets. The motivation for targeting these users is not likely to be financial. Presumably, other copyright owners may have the same motivation, in which case the fact that Dr. Dre is suing over downloaded music, as opposed to RAM copies of his works, might be insignificant. For example, if the motivation is to stop widespread dissemination of the works by frightening the end user, the same goal can be achieved by suits based on infringing RAM copies.

Taking the "wait and see" approach is dangerous and completely diametrical to the approach taken by American copyright law, and it severely threatens the traditional and revered balance between the rights of copyright owners and the need for public access to information. The rights of copyright owners are explicitly spelled out in the Copyright Act, but they

periodically require interpretation, as illustrated by the question of fixation in regard to RAM copies. The rights of information users are not so clearly spelled out in the law. Aside from a few specific exceptions for specific situations (such as copying by libraries for interlibrary loan and archival purposes), most of the "user's rights" in copyright law are vague and require interpretation by the courts, the result of which is often uncertainty going into litigation.

Fair use is the tool most widely used to balance the rights of copyright owners against those of users. Although it was originally a judicially created doctrine[44] and arguably serves its overall purpose, it can be disturbingly vague and undependable.[45] Fair use is determined on a case-by-case basis,[46] and the analysis ***108** is quite subjective.[47] Because the user side of the scales has less on which to rely, and because the ramifications of *Intellectual Reserve*, the Dr. Dre case, and future decisions applying the *MAI* holding to Web browsing are not clear, to "wait and see" what the results of future cases might be is a potentially serious threat to the balance traditionally maintained by copyright law.

III. Copies in RAM Should be Explicitly Excluded from the Exclusive Reproduction Right

A. Original Purpose and Intent of Protecting the Reproduction Right, Pre-Internet

1. Primary Purpose of American Copyright Law

The purpose of copyright protection as stated in the Constitution is "[t]o promote the Progress of Science and useful Arts."[48] Commentators and courts alike have repeatedly affirmed that the primary purpose is to promote the public good and that rewarding authors for their work is a means to that end, not an end in itself.[49] Professor Nimmer succinctly states that "[t]he primary purpose of copyright is not to reward the author, but is rather to secure 'the general benefits derived by the public from the labors of authors.'"[50] In the words of Congress:

> A fundamental goal of copyright law is to promote the public interest and knowledge ... Therefore, the congressionally mandated grant to authors of the limited monopoly is based on a dualism that involves the public's benefits from the creativity of authors and the economic reality that a copyright monopoly is necessary to stimulate the greatest creativity of authors. A direct corollary to this concept is that the grant of a monopoly would not be justifiable if the public did not benefit from the copyright system.[51]

In applying copyright law to new situations, we must keep in mind that the original fundamental purpose of the law is to benefit the public, not authors. Benefits derived by authors are simply a mechanism for achieving the fundamental ***109** goal. Thus, in asking whether RAM copies[52] should be subject to claims of copyright infringement, we must ask if the public interest is best served by allowing RAM copies to be infringements or by categorically disallowing it.

2. Economic Theory and Copyright Law

At least one economic theory of intellectual property is based on the nonexclusivity of intangible goods.[53] Because of the nonexclusive nature of information—the fact that it cannot be possessed and controlled by only one person at a time to the exclusion of all others—the information market is prone to inefficiency and failure.[54] In economics terms, the problem for intellectual property owners is the difficulty of receiving full market value for their property, which, without finding a way to exclude non-payers, results in a decrease in the owner's willingness to continue to invest in producing new types of information.[55]

This economic theory can be applied to the efficiency of copyright in balancing public access to information with private intellectual property rights. In this scheme, public access is itself an incentive to authors, in that authors must be able to take advantage of the works of others in order to create their own works.[56] The problem is put in terms of an equation, one side of which "requires access and use and assumes that this will produce ... heightened creative output. The other half requires protection and controlled access and use in order to secure payment to the copyright owner, who may or may not be the actual creator."[57] Thus, the financial benefits are seen as an incentive for investors, but not necessarily for authors.[58] The theory acknowledges that there are many reasons why authors create new works, many of which may not be based on finances.[59] The balance sought is one that would "'provide protection to the point where the value of the additional knowledge created equals the reduction in the value of the usefulness of the knowledge created by the restriction.'"[60]

***110** Various critics have argued that copyright may not be the best approach to achieving the efficiency attempted by this balance[61] by questioning (1) whether the current rights granted to copyright owners actually act as incentives and (2) whether the monopoly provided by copyright succeeds in "promot[ing] the creation of new ideas and works enough so as to offset the high price of goods embodying intellectual property."[62] Applying these arguments to the issue of protection for RAM copies leads to the conclusion that such protection does not result in economic efficiency.

To respond to the first criticism, we must ask: Does providing copyright protection for RAM copies act as an incentive for authors? In other words: Would the lack of copyright protection for RAM copies act as a disincentive for authors? In the print medium, this seems to be roughly equivalent to asking if the lack of copyright protection for accessing works is a disincentive. That is, does the inability of the author to control who picks up his book in a bookstore or library discourage him from producing works? Given that this kind of protection has never been provided under copyright law, the answer clearly would be "no." To the contrary, it is generally in the author's interest to encourage access to his work that ideally will result in sales. In addition, given the uncertain status of whether RAM copies made from Web browsing are protected, it is quite doubtful that authors have relied on that protection in their decisions to create works and post them on the Web.

To respond to the second criticism, we must ask: Would the cost of providing copyright protection for RAM copies be offset by the role it would play in promoting new works? As argued in the previous paragraph, it is highly doubtful that protecting RAM copies would play a measurable role in encouraging new works. It is important to remember that we are talking about protection via copyright, not protection via contracts or user licenses. We are asking not whether an author should have a right to restrict access to his works on the Web using licenses to which the user must agree, but whether we should state across the board that making RAM copies infringes copyright if not excused by a defense, including fair use and implied license arguments. Although it is not clear what the cost of providing such protection would be, especially given constantly developing technology, the result would be to declare all uses of the Web prima facie infringements, allowed only if the use meets a defense. But such a presumption is not an economically efficient approach, especially given the low incentive value of protecting RAM copies.

In a slightly different view of the economic theory behind copyright, Professor Breyer suggests that copyright is only one way to settle what he sees as the basic economic conflict behind copyright law, that is, the conflict between consumers of ***111** information and producers of information.[63] He argues that relying on the players in that conflict to come to their own agreements is a more efficient means of resolving the conflict and suggests various plans, such as providing for consumers to pay in advance for works, providing incentive for producers, and creating "buyer's groups" to negotiate and contract with producers.[64] Professor Breyer argues that eliminating copyright would encourage competition between publishers.[65] The greatest problem presented by this argument is the fact that the initial publisher would bear greater costs than subsequent publishers.[66]

However, he bases this argument on advantages that initial publishers would have over subsequent publishers in the traditional print arena, including substantial lead time, better quality reproduction, and better channels of distribution.[67] All of these advantages are neutralized in the cyberworld, where "lead time" is almost nil, reproduction quality is precisely equivalent, and the channels of distribution are the same. Given the absence in cyberspace of the problems on which Professor Breyer focuses, perhaps his argument encouraging negotiations between groups makes even more sense in that arena. The focus on RAM copies then changes completely. Presumably, the purpose served in a copyright system by holding RAM copies to be part of the reproduction right is, in a contract or licensing system, subsumed by the contract negotiations for access. There would be no need to deal with RAM copies at all in a negotiation-based system, as they would be only a means to an end that would be addressed in contracts.

Despite a variety of arguments that copyright is not an economically efficient system, the uncertainty about what would result if copyright were abolished leads most economists to focus on maintaining a balance between the conflicting economic interests of users and copyright owners.[68] Economists are concerned by the threat of new technologies to this balance, and the question they ask is: "Who should benefit from the new products and uses that emanate from new technologies?"[69] Applied to the issue of RAM copies, the questions should be: "Is any economic efficiency gained by extending the reproduction right to include these copies resulting from a new technology? Is any economic efficiency lost by not doing so?" As reflected in the arguments above, the answer to both questions is "no."

***112 3. Legislative History and the Reproduction Right**

The specific right of reproduction per se, as opposed to the right to make multiple copies for commercial purposes, was first given to copyright owners in the 1909 Copyright Act, when the word "copy" was added to the list of exclusive rights. Professors Patterson and Lindberg argue that this extension of an owner's rights was unintentional.[70] The Act stated that a copyright owner would have the exclusive right to "print, reprint, publish, copy, and vend the copyrighted work."[71] The House report on the Act claims that the new law adopted "practically" the same language as the previous law and that the committee intended to adopt that language without change.[72] Professors Patterson and Lindberg note that the report "made it appear that 'the insertion of the word 'copy" [where it had not appeared in previous statutes] was merely a drafting change without substantive consequences."[73] How such a seemingly major change in rights could occur unintentionally is better understood by reviewing the history of previous copyright laws.

Until 1909, the right to copy was included in copyright law but applied only to works of art, as opposed to literary works.[74] Taken together with the statements in the House reports on the 1909 Act, it would seem that the intention of Congress was not to apply the reproduction right to all works; indeed, Professors Patterson and Lindberg argue that the word "copy" should have been treated as a term of art, not in its generic sense.[75] They argue that the correct interpretation of the 1909 Act would have been to treat as infringing only such copying as is done for commercial purposes, since only acts done for commercial purposes were considered to be infringing under previous laws. In the first Copyright Act, of 1790, exclusive rights were given for printing, reprinting, publishing and vending the work. Professors Patterson and Lindberg argue that the only reason to print, reprint, or publish was to sell the work; therefore, a correct reading of the 1790 Act would be printing and vending, reprinting and vending, and publishing and vending. In other words, vending was not intended to be an independent right. Thus, the correct reading of the 1909 Act would be the same, with the addition of "copy and vend."[76]

Professors Patterson and Lindberg argue for interpreting the reproduction right in the 1976 Act as a dependent right as well.[77] The exclusive rights to create derivative works and to publicly perform, display, and distribute are "subject ***113** rights—operating like the subject of a sentence in determining the scope of what follows."[78] In contrast, the reproduction right functions as a "predicate right [that is] necessary to make the subject rights operative."[79] As evidence that the reproduction right was intended to be dependent, they cite the fact that Congress placed specific restraints on all the other rights but none on the reproduction right (the word *publicly* limits the performance, display and distribution rights; the first-sale doctrine limits the distribution right; and the idea/expression dichotomy limits the derivative works right).[80] They argue that "[t]o construe the ... right to copy as being absolute ... would be to attribute to Congress either ignorance or guile, since such a construction would undermine the limitations on the copyright monopoly Congress so carefully crafted for the [other] rights."[81]

In conclusion, they point out that if this interpretation were incorrect, all copying, even for private purposes, would infringe copyright.[82] This would serve to negate the limitations imposed on the other rights. For example, the first sale doctrine allows the owner of a copy to distribute that copy in any way he chooses, including publicly. To make sense, then, of the exclusive right of *public* distribution, we must assume that the user has made *copies* for distribution. If, however, all private copying, for any purpose, is infringing, there is no need for the "public" restriction on the distribution right. On the other side, one who makes copies with the intent to distribute them publicly would be liable for infringement under Professors Patterson and Lindberg's analysis before actually distributing them.[83]

The House Report from the Committee on the Judiciary on the Copyright Act of 1976 employs broader language that also can be interpreted as revealing an intent contrary to protecting RAM copies.[84] In the context of discussing changes in technology, the Report states that the bill did not intend to "allow unlimited expansion into areas completely outside the present congressional intent .... Although the coverage of the present statute is very broad ... there are unquestionably other areas of existing subject matter that this bill does not propose to protect."[85] Thus, Congress explicitly stated that it did not intend to cover every possible form of work, including those inconceivable at the time. It also explicitly stated that it did not intend to expand protection to areas "completely" outside those currently protected at that time.

***114** Legislative history would suggest that RAM copies should not be included in the reproduction right. If Professors Patterson and Lindberg are correct in their analysis, then protecting non-commercial copies made by individual users was never intended by the authors of our copyright statutes. Clearly, RAM copies are in this category. An assumption that RAM copies should be protected by copyright, based on the belief that Congress intended the widest possible protection into then unknown areas of technology, thus would be erroneous. Protecting RAM copies would extend protection to an area "completely" outside the previous realm of copyright protection by extending protection to the actual accessing of works. Never before has a copyright owner been able to control who accesses his work once he makes it publicly available. Some have referred to such a right as the "right to read".[86] This term testifies to how fundamental a change in copyright protection it

would be to protect RAM copies.

4. Summation

Protecting RAM copies made during Web browsing would not meet the original intent behind the reproduction right. The primary purpose of the copyright law is to serve the public interest. Providing benefits to the copyright owner is a means to that end. Protecting RAM copies would benefit the copyright owner solely, because it would not act as an incentive for the creation of further works. In addition, protecting RAM copies would be economically inefficient since the cost of protection would not be offset by promoting new works. Even under Professor Breyer's suggestion that copyright be replaced by negotiating systems, no argument exists for protecting RAM copies specifically, since such protection would only be a means to an end that would be spelled out in contracts or licenses. Finally, legislative history of copyright acts from 1790 to 1976 indicate that RAM copies should not be protected, for two possible reasons. First, arguably, Congress never intended to create the reproduction right in its current interpretation of protecting against private, noncommercial reproductions. Second, the reproduction right historically has been based on preventing others from benefiting financially by copying the protected work. This does not apply to RAM copies. Thus, the original objective behind the reproduction right will not be met by protecting RAM copies.

B. Current Defenses in the Copyright Law are Insufficient to Prevent Application of the Reproduction Right to RAM Copies

1. Fair Use

Even if courts ignore the purpose of the reproduction right and hold RAM copies to be an exclusive right of copyright owners, making RAM copies while browsing the Web in many situations is likely to succeed under a fair use analysis. However, in other situations, success is less likely. Ironically, the difference depends on nothing that is under the user's control. A brief review of the situation ***115** demonstrates that the application of the fair use doctrine is neither a suitable nor an efficient means of resolving the issue of RAM copies.

Using the fair use doctrine, courts are able to balance the interests of the copyright owner and those of information users in situations in which the copyright owner establishes a prima facie case of infringement yet equity requires a finding of noninfringement. Fair use allows courts to excuse acts that would otherwise be infringement when the public benefit of the use outweighs the harm done to copyright owners. However, despite application of specific criteria, the fair use analysis is often so subjective as to be notoriously uncertain.[87] Thus, to ensure consistency in applying copyright law according to congressional intent, certain specific uses that otherwise likely would qualify as fair use have been codified as exceptions to a copyright owner's exclusive rights.[88] As technology develops, it has become necessary to continue to add to these exceptions; thus, Section 117, exempting reproductions of computer programs made for specific purposes, was added in 1980.[89] In fact, long before the introduction of the personal computer, Professor Breyer suggested that Congress implement a method for periodically adjusting the fair use doctrine in order to "guard against the risk that advancing technology and changing economic circumstances will make [[fair use] obsolete."[90] In evaluating the making of RAM copies under the fair use analysis, we must keep in mind both whether fair use in its current form is an appropriate analysis and also whether fair use is the most efficient approach to take towards judging this type of copying.

The first factor of the fair use analysis is purpose and character of the use, which includes whether the use is commercial[91] and transformative.[92] It is difficult to imagine a situation in which the RAM copy itself would serve a commercial use. Certainly, the user is not making money from that copy, as he might from a copy printed or downloaded to more permanent storage. Neither is the user making a RAM copy in order to avoid purchasing a copy. A RAM copy is, however, nontransformative in nature, meaning that it is an exact replica of the original. In general, this weighs against the user.[93] However, the reason for being harsher on nontransformative uses is that it supports the argument that if the user intended to use the entire work, he should have purchased a copy. Because we are not talking about hackers who "hack around" a point at which they are required to pay for ***116** access to a site, this rationale does not transfer to the RAM issue; there is no option to buy a copy of the work placed in RAM. Thus, the user should succeed on the first factor.

The second factor considers the nature of the work copied,[94] including whether the work is fact or fiction and published or unpublished.[95] Works on the Web fit into every category under this factor. Arguably, there are different stages of

"publication" of works on the Web, from digital reproductions of works that have been published in print on one end, to Web pages that are labeled "under construction" on the other. It is difficult to make a general conclusion on this factor.

The third factor measures the amount and substantiality of the use as compared to the work as a whole.[96] A RAM copy is a reproduction of a Web page in its entirety. However, the rationale behind this factor is similar to asking whether a work is transformative in nature: it suggests the great unlikelihood that it is more equitable for a user to copy an entire work than it is to require him to purchase that work. In comparison, it seems inequitable to require a user to purchase an entire work of 200,000 words so that he may use only one or two sentences from it. Thus, if we move away from the technicality and look at this factor based on its rationale, this factor probably should not be counted at all in the evaluation. The rationale does not apply in regard to RAM copies, because the user does not have the option of copying less than the entire work.

The final factor asks about the effect of the use on the present and future markets for the work, should the use be widely adopted.[97] This is another factor that does not fit well with the issue of RAM copies. The situation of concern reflected in this factor is the possibility of competition with the original work, by distributing a similar work either for profit that would otherwise go to the original copyright owner or for free, which would nullify any reason for other users to purchase from the original copyright owner.

How courts weigh this factor will depend largely on whether the copyright owner has willingly allowed access to his material. If he has, and if it can be argued that RAM copies have any effect on a market for the original work, that effect would be a positive one. In cases in which the user pays to access a site, he has bought the right to make a RAM copy. In cases in which the user is not required to pay to access a site, the author presumably has a reason for allowing free access, including other means of benefiting financially from the work. Based on this fact, several arguments can be made that the use (creating the RAM copy) benefits the market for the work. The user himself may act as a marketing tool, telling his friends about the site. The site may be supported by advertisements, which are often based on the number of users. The author may be selling ***117** something on the site other than access to the page itself. In all of these cases, the author would benefit from each use of the site.

By the same token, in cases in which the material is being provided without the copyright owner's permission, the effect would be negative. Accessing the infringing works on the Web presumably hurts the rightful copyright owner's opportunities to benefit from control of his work. Because making RAM copies allows the user to view the material without paying the author (i.e., accessing an infringing copy circumvents the author's chosen distribution routes), the copyright owner could argue successfully that the RAM copies are themselves infringing. Thus, when the user views Web pages containing infringing information, the fair use analysis is much less likely to support his use.

In general, it seems that the traditional fair use analysis does not fit well with the issue of infringing RAM copies. The deciding factor of whether the user will succeed in a fair use defense is something beyond his control, and, in most cases, even his ability to know whether the material he accesses has been legally made available to him. Despite the intention that the codification of fair use be broad and flexible, we must recognize that it will not fit all emerging technologies. The Supreme Court has summed up the basis of the fair use doctrine by asking whether a reasonable copyright owner would consent to the use in question.[98] Similarly, in evaluating the fair use of making video-taped copies of television programs for home use, the Court stated that the fact that the entire work was reproduced did not carry its usual weight against the user because the copying enabled him "to see such a work which he had been invited to witness in its entirety free of charge."[99] These summations of the fair use doctrine both seem to be based on an implied license argument, which will be discussed in the next section. The first summation is a restatement of the implied license argument. As to the latter statement, a user making RAM copies clearly has been invited to view the work in its entirety. When he has had to pay to access the work, he has paid for the right to make the RAM copy, as this is the only way for him to access the work. In many cases, access will be for free. Although we attempt to adjust the fair use doctrine to fit the issue of RAM copies made during Web browsing— to take in a seam here and let out a seam there, to replace a waistband with a belt—it remains a garment that will never quite fit as was intended.

2. Implied License

A non-exclusive license to use a copyrighted work may be implied from conduct.[100] Implied license is a defense based on the intent of the copyright owner, ***118** which may be inferred by her actions.[101] A meeting of the minds is required to establish an implied license.[102] The analysis is based on what a reasonable person would consider to be an indication that an agreement

has been reached.[103] Unlike fair use, the copyright owner's intent is at issue.[104] Like fair use, the implied license defense is determined on a case-by-case basis.[105]

It seems reasonable to presume that a party placing a Web page on a publicly accessible site does so in order for other to access the page. Beyond simply accessing the page, Professor Ginsburg argues, there may be an implied license to "enjoy the work in a manner convenient to the consumer."[106] She cites the Supreme Court's implication in *Sony Corporation of America v. Universal City Studios*[107] that personal convenience may in some cases be a basis for a finding of fair use.[108] When an author puts up a Web page, she knows that other Web users will access it. Even if the author does not realize the technicalities involved, i.e., that RAM copies are being made during that process, the very act of putting up the page infers that the author would agree to have users who view her page make those copies necessary to do so.

Where implied license fails as a defense to Web browsing, however, is in a situation in which the Web author has incorporated infringing materials into her Web page. In this situation, the Web page author is not the copyright owner of the materials being viewed. If the materials are infringing, then by definition, the copyright owner has not given permission for others to view them; thus, his intent clearly is to not have Web users view the material. In such a case, no implied license exists.

3. Section 117 Exemption

Section 117 of the Copyright Act addresses limitations on the exclusive rights of owners of copyrights in computer programs. Section 117 contains several provisions,[109] but the one that concerns us is Section 117(a), which provides in part:

> ***119** [It] is not an infringement for the owner of a copy of a computer program to make or authorize the making of another copy ... provided that such a new copy ... is created as an essential step in the utilization of the computer program in conjunction with a machine ....[110]

For the purpose of using Section 117 as a defense to charges of infringement by making RAM copies, three issues are present: (1) does Section 117 apply only to "owners" (2) of "computer programs"? and (3) does creating a RAM copy qualify as "an essential step in the utilization of a computer program"?

a. "Owner" versus "Rightful Possessor"

The subject matter of Section 117 as included in the 1976 Copyright Act was broader than the current Section 117; the original version addressed automated data storage, processing, and retrieval systems rather than software programs specifically.[111] At that time, the Committee on New Technological Uses ("CONTU") was still engaged in its study of technology and copyright law. CONTU's original mandate from Congress was "to recommend such copyright law changes as 'may be necessary to assure for such purposes as access to copyrighted works ...."[112]

In 1980, Congress passed the new Section 117 into law, based primarily on CONTU's recommendations. In passing the new statute, Congress made only one change from CONTU's recommended language: it changed "rightful possessor of a copy of a computer program" to "owner of a copy of a computer program."[113] No legislative history explains this change.[114] The implications of this change, of course, are enormous in a society in which the vast majority of computer users *license* the software they use rather than *own* it. Adding to the confusion, the next paragraph of Section 117 states that archival copies must be destroyed "in the event that continued *possession* of the computer program should cease to be *rightful*."[115] This seems to parallel the original language in CONTU's recommendation as well as introduce the question of whether an owner (as designated in Paragraph (1)) can cease to become the rightful possessor (as designated in Paragraph (2)).[116]

Finally, in its report on the 1980 bill, Congress acknowledged that CONTU was the authority on copyright as applied to computer software.[117] In its report to ***120** Congress, CONTU reasoned that "rightful *possessors* of copyrighted software should be free to use the software in the manner in which they intend and justifiably expect to use it, without fearing claims of copyright infringement."[118] At the time, like today, it was customary for software users to license their software rather than purchase ownership of it.[119] Presumably, CONTU was aware of this practice, and, arguably, this is likely to be the reason behind its choice of language, choosing "rightful possessor" over "owner."

More than one commentator has argued that these facts together suggest that Congress acted either in haste or inadvertently in making the language change.[120] If indeed, the statute applies to "rightful possessors" rather than "owners," Section 117 might be applicable to Web browsing in that the user could be considered the "rightful possessor" of the Web page at the time he is viewing it.

b. Computer Programs

Section 117 was written to apply to "computer programs," over ten years before the World Wide Web became a widely-used tool. Even if one could argue that the Web is a computer program, it is questionable whether the computer program itself is being copied in RAM, rather than data that is stored and accessed by that program.[121] In contrast to the current Section 117, the original Section 117 applied to the exclusive rights of copyright owners "with respect to the use of the work in conjunction with automatic systems capable of storing, processing, retrieving, or transferring information."[122] The change suggests that Web pages would not be considered computer programs. At least one commentator, however, has presented the argument that Web pages could be considered computer programs because they are written in computer readable language.[123]

c. Essential Step in the Utilization of a Computer Program

Section 117 allows the copying of a computer program if it is "an essential step in the utilization of the computer program."[124] "Essential" has been defined as "indispensable and necessary."[125] Perhaps the only case to apply this requirement to RAM copies held that RAM copies of computer programs are essential steps in ***121** the utilization of a program.[126] The court's reasoning was based on the fact that "Congress recognized that a computer program cannot be used unless it is first copied into a computer's memory"[127] and thus wrote Section 117 to allow such copying.[128] Whether or not RAM copies of Web pages qualify as computer programs, Web pages cannot be used unless first copied into a computer's memory. Additionally, the CONTU report stated that one who rightfully possesses a copy of a program, therefore, should be provided "with a legal right to copy it to that extent which will permit its use by that possessor."[129] This would include "the right to load it into a computer."[130] Based on the intent of both Congress and CONTU, then, RAM copies of Web pages should be allowed under Section 117.

d. Summation

Web users obviously do not own the vast majority of the Web pages they view. If a Web user is a "rightful possessor" of the RAM copies of the pages he views, and if Section 117 can be applied to rightful possessors, Section 117 might be used as a defense to a charge of infringement based on making RAM copies. However, one would have to use an implied license argument to get the point of a Web user being a "rightful possessor." If that argument succeeds, it would be hard to argue that no implied license to make the RAM copy exists. Therefore, using Section 117 as a defense would seem to be not only duplicative of using an implied license defense, but also more cumbersome.

There have been relatively few cases interpreting Section 117.[131] Some commentators argue that courts have been confused by the technical nature of Section 117, leading to inconsistent interpretations of the law's purpose and unexpected practical consequences.[132] Concerns exist that interpretations may neglect maintaining the balance of rights between copyright owners and users.[133] Instead of focusing on whether particular situations meet the specific technical requirements of Section 117, commentators suggest that we should focus on the economic policy and balance intended by CONTU, which is to balance "the legitimate needs of software users against the reasonable business expectations of copyright owners."[134]

***122** One of Congress' stated goals for the CONTU report was to write copyright law so that it would ensure access to copyrighted works.[135] CONTU in turn recommended that "rightful possessors" of software be able to use it as they justifiably intend and expect.

4. Current Defenses are Inappropriate to Protect RAM Copies from Liability for Infringement

Current defenses to copyright infringement are inappropriate for the purpose of defending the making of RAM copies for two reasons. First, they are insufficient. Fair use applied to RAM copies provides different answers for the user, depending on a factor that is both beyond his control and often beyond his ability to know. Thus, it is a very uncomfortable fit. Although the

user would succeed on the first and third factors (purpose and character of the use and amount used), the rationales behind those factors do not apply to cases of RAM copying. The fourth factor, or the effect of the use on the present and future markets of the work, is not really applicable at all. No market for RAM copies exists, yet the overall effect of a user making RAM copies for the purpose of viewing noninfringing Web pages is likely to benefit the copyright owner in a variety of ways. However, it is less likely that the fair use defense would support the Web user in a case in which he accesses a page containing infringing materials.

The implied license defense is more straight forward in some situations. It is very difficult to argue against an implied license when a copyright owner makes his work publicly available on the Web. However, if materials on a page being viewed already are infringing, the implied license exception would not apply.

Section 117 creates even more awkwardness. RAM copies made during Web browsing seem to fit the intent behind Section 117 but do not fit the language. At the least, one would have to stretch the language to find that Web pages constitute computer programs. The style of the garment is appropriate for the model, but it cannot be made to fit as intended.

Second, applying the current defense to these situations abuses the intent of their use. To use them in the scenario of RAM copies of Web pages would create serious judicial inefficiency. Defenses are meant to bring flexibility to the law. They are meant to be used in a case-by-case basis, which assumes that each case is different. Defenses, by definition, are meant to be exceptions. The cases with which we are concerned, however, are significantly alike in the ways that matter for these defenses. Thus, they should be treated as a rule, not as an exception.

In addition, despite the strong arguments made here, the need to rely on defense that are intentionally flexible means that one can never be certain without going through litigation that one's use will be allowed by the law. This is especially true in the current environment of rapid growth in new technologies, in which it becomes increasingly difficult to predict how courts will rule in new ***123** situations.[136] This makes it impossible for attorneys to advise their clients with confidence in an area with increasing financial ramifications.[137]

Because applying current defenses to RAM copies of Web pages is not the most efficient way to address the needs of users or to make use of the defenses, such an application is inappropriate and a waste of resources on both sides. Therefore, a specific exception for RAM copies of Web pages should be written into copyright law.

IV. Copyright Alternatives and the Problem Caused by RAM Copies

Even if RAM copies are exempted statutorily from copyright protection, however, some of the same problems meant to be prevented still may exist as a result of the dramatic increase in use of licensing and technology to control access to and use of works in cyberspace. Due to copyright owner concerns about the ease with which reproduction and distribution rights can be violated in cyberspace, many information providers in cyberspace are turning to alternative methods of copyright enforcement, such as licensing and technological controls. Whether or not intentional, however, these tools frequently act as barriers to access, as does protecting RAM copies, and lead to the same result of creating a "right to read."

A. Licensing

The concern with licensing is not that licenses would give the copyright owner the explicit right over making RAM copies, but that they would be used to control initial access to works, which is the same problem created by giving copyright owners the right to RAM copies.

1. Collective Licensing

Professor Ginsburg likens the current situation of copyright enforcement problems in cyberspace to problems enforcing public performance rights in musical works in the mid-nineteenth century.[138] The cause of the enforcement problem is the same in both cases, because the infringing users are both "extremely numerous" and "widely dispersed."[139] Owners of copyrights in musical works worked to create collective licensing agencies, which then took on the job of enforcing the copyrights, as well as providing a mechanism for users to obtain license to perform the works. Professor Ginsburg argues that although similar collective licensing agencies could be created to monitor infringements of works in cyberspace, they would

not be as well suited for cyberspace as they were for the ***124** music world.[140] It would be impractical, if not impossible, for the agencies to proactively contact and contract with individual users.[141] For this reason, such agencies would be more likely to target bulletin board services and network operators, "who make available and control the electronic fora for communication of unauthorized copies, displays, or derivative works," than individual users.[142]

The primary weak point in this analysis may be a result of the rapid pace of technological change in the five years since Ginsburg's argument was published. Ginsburg's argument is based on the explicit assumption that reaching individual users is too costly or impractical, so they will not be targeted for enforcement purposes. To the contrary, a variety of technological means currently available would allow a collective licensing agency to both reach users and charge for their uses and to monitor those uses that are not licensed. For example, use of digital watermarks would allow an agency to trace unauthorized copies back to the infringer. "Click-wrap" contracts requiring payment of licensing fees would allow an agency to force a user to pay for various uses. Unfortunately, the same contracts easily can be used to force the user to pay a collective licensing fee before accessing a page. To the extent that a collective licensing arrangement could succeed in cyberspace, then, it is also a significant potential threat to a user's ability to browse the Web.[143]

2. "Click-wrap" Licensing

Click-wrap licenses are agreements to which a user must agree, by clicking on the appropriate button, before proceeding in his use of the protected site. Web authors may insert a click-wrap license at any point. Thus, licenses may appear when a user first attempts to access a site, when a user attempts to go to a certain page on the site, or when he attempts a particular action, such as printing or downloading. For this reason, click-wrap licenses may be used as a valuable tool in protecting a copyright owner's traditional rights, or they may be used in an attempt to create new "rights." If they appear when a user first attempts to access a site, they essentially may control access. Of course, a user can always click "OK" and continue on to the Web page, but by being forced to agree to whatever terms are in the contract before even accessing the site, his access is being controlled.

Use of "click-wrap" licenses is a rapidly increasing means of controlling intellectual property in the digital world. In theory, they provide the copyright owner with protection that might otherwise be difficult to obtain in the digital environment. In theory, the American legal system would support such uses, given ***125** the value placed on the freedom to contract. In reality, though, many questions arise regarding specifics of the use of clickwrap licenses. For present purposes, the main concerns are at what point in the process licenses are implemented and whether licenses may be used to expand the scope of copyright protection beyond that intended by intellectual property law.

If the terms of the contract are a promise to not violate copyright law, there is not much of an issue. But as David Nimmer points out, those protections for the copyright user already exist in the law, so why the need for a license?[144] Presumably, then, clickwrap licenses will attempt to obtain more protection for copyright owners than is provided in current copyright law, one example of which easily could be a limit on access, such as limiting the number of times or frequency with which a user may access a site. Additionally, even if the terms do not expand protection, forcing users to agree to clickwrap licenses presents potential conflicts for fair use by requiring a user to contract away his fair use rights simply to access a page.

Thus, licenses clearly have the potential to lead to the same problem caused by protecting RAM copies. Clickwrap licensing already is used commonly on the Web. A statutory exemption for RAM copies from copyright protection possibly could help to prevent the use of clickwrap licenses as barriers to access under the doctrine of preemption.[145]

B. Technological Controls

1. Date Bombs

Rather than limit initial access, a copyright owner may chose to limit the number of times a user can visit his Web page.[146] Alternatively, a user may be limited to a certain time period for accessing a particular page.[147] When he exceeds his limit of ten visits or thirty days of access, he will be denied future access. Both options currently are available through various software. Using "date bombs" is analogous to browsing a bookstore, in that it allows the user to view for free for a brief period material that is for sale before making a purchase decision. However, the two situations also differ in a significant way. As applied to fair use and other excused uses of protected information, an appropriate analogy would be to say that a

bookstore is the only place to obtain information. In other words, no libraries or ***126** other mechanisms for obtaining unlimited free access to works, or for making copies of works, would exist. Therefore, while "date bombs" do provide a certain amount of balance, the potential still exists that they will lead to the same result as protecting RAM copies: limiting non-infringing uses.

2. Copy Protection

Current technology provides a somewhat limited mechanism for protecting digital works only from being copied, either digitally or by printing.[148] This technology currently is included in Adobe Acrobat software.[149] Unfortunately, some concern exists about how easily the technology can be dismantled.[150] To the extent that a copyright owner is concerned more with the making of unauthorized copies than with other types of infringements, this technology provides a much more balanced approach than most other technology controls. However, to the extent that this technology is not as secure as many copyright owners would like, it is impractical to rely solely on copy protection software.

3. Metering Technology

Perhaps the most promising technology controls, from the aspect of balancing the rights of copyright owners and information users, is metering technology. Several variations on the idea currently are available,[151] but the general idea is the same: the technology allows a second party (whether copyright owner, vendor, or other) to monitor or control particular uses of information. Using access codes, a copyright owner may "sell" a user the right to access a page for a specified number of times before changing the code.[152] Using "rights management envelopes," plugins may be used to charge a user's account for access.[153] Encryption may be combined with "digital certificates" to identify individual users and the rights that they have purchased, thus limiting the uses accordingly.[154] Metering tools, like licenses, can prevent initial access to information. However, to the extent that they focus on individual uses more so than many other technological controls, they are more flexible and thus are preferable, as long as they are not misused to invade the privacy of users. Nonetheless, potential problems still would exist for excused uses such as fair use.

C. Summation

... Success of a copyright scheme does not lie in its comprehensive effectiveness so much as in its successful maintenance of an environment within which the vigorous production ***127** of goods continues to be worthwhile .... The core problem for intellectual property law posed by cyberspace is not how to defend property claims most successfully but how to protect the public *against* overly aggressive protection of one value to the exclusion of all others.[155]

Licensing and technological controls are mixed blessings for the application of copyright law to cyberspace. They offer the promise to allow copyright owners to regain some control over their works in an arena notorious for lack of all sorts of controls. But they also can allow copyright owners easily to claim rights not covered by copyright law precisely because of the emphasis on maintaining a balance between the rights of copyright owners and the public interest. One of the many rights potentially threatened by widespread use of licensing and technological controls is the "right to read," which is precisely the right threatened by protecting RAM copies under copyright. Licensing and technological controls are here to stay, but the legal community must work to ensure that they are not abused by copyright owners to the detriment of individual rights and the public interest.

V. Conclusion

To look for familiar patterns in new forms allows us to make sense of change. If we can find those familiar patterns, we can more easily adapt ourselves to dealing with the new form. This article has attempted to probe the new forms created by the information revolution and to show that, although they may not be totally unfamiliar, they are new enough—or different enough in just the right ways—that our old, familiar ways of dealing with copyright will not be as successful in the new cyberworld as they have been in the past.

The World Wide Web is a pervasive and powerful tool. Indeed, many users probably would say they could no longer

function without it. Despite the best intentions of Congress in writing the Copyright Act of 1976, the Act simply does not apply to one critical aspect of Web usage—the RAM copies that are made on a user's computer each time he accesses a Web page. The information revolution, and the World Wide Web in particular, are changing our economy and our society in ways unimaginable only a few years ago. RAM copies are one of the beams in the foundation of that uncertain world. If one beam crumbles, the entire building is not likely to fall. However, one crumbling beam can create significant problems for the entire rest of the building and can be extremely difficult to repair once the building is in place. It is essential that our law provide as much certainty as possible to this world of endless uncertainty. Currently, the uncertainty about copyright protection for RAM copies that result from Web browsing weakens the structure of the building and threatens our ability as a society to make the most out of the vast opportunities presented to us by the Web.

***128** The primary goal of American copyright law—to benefit the public by encouraging production of and providing access to creative works—is met by excluding from copyright protection RAM copies made during the Web browsing process. The defenses in our current copyright law are insufficient to ensure that courts will treat this issue consistently and efficiently. The only way to provide the necessary exception for RAM copies is to amend the copyright law to include a specific exception.

Footnotes

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[1] *See, e.g.*, Randy V. Sabett, *International Harmonization In Electronic Commerce and Electronic Data Interchange: A Proposed First Step Toward Signing On the Digital Dotted Line*, 46 AM. U.L. REV. 511, 525 (1996) (stating that "it became evident that the repercussions of this information revolution would far exceed the effects of ... Gutenberg's printing press, with an even greater impact on society"); Henry H. Perritt, Jr., *Electronic Records Management and Archives*, 53 U. PITT. L. REV. 963, 980-81 (1992) (stating that "[t]he electronic information revolution is, however, as profound as the printing press revolution in its potential impact on cultural and social patterns for creating and using information.").

[2] Jessica Litman, *Copyright Noncompliance (Or Why We Can't "Just Say Yes" to Licensing)*, 29 N.Y.U.J. INT'L L. & POL. 237, 251 (1997).

[3] Niva Elkin-Koren, *Cyberlaw and Social Change: A Democratic Approach to Copyright Law in Cyberspace*, 14 CARDOZO ARTS & ENT. L.J. 215, 217 (1996).

[4] *See infra* Parts II, III; MAI Sys. Corp. v. Peak Computer, Inc., 991 F.2d 511, 26 U.S.P.Q.2d (BNA) 1458 (9th Cir. 1993); Intellectual Reserve, Inc. v. Utah Lighthouse Ministry, Inc., 75 F. Supp. 2d 1290, 53 U.S.P.Q.2d (BNA) 1425 (D. Utah 2000).

[5] 991 F.2d 511, 26 U.S.P.Q.2d (BNA) 1458 (9th Cir. 1993).

[6] *Id.* at 518, 26 U.S.P.Q.2d at 1463.

[7] 75 F. Supp. 2d 1290, 53 U.S.P.Q.2d (BNA) 1425 (D. Utah 2000).

[8] Robert Cailliau, *A Short History of the Web: Text of a speech delivered at the launching of the European branch of the W3 Consortium, Paris, 2 November 1995 at* http://www.inria.fr/Actualites/Cailliau-fra.html (last visited Nov. 5, 2000).

[9] *Id.*

[10] *Id.*

[11] *NUA Internet Surveys at* http://www.nua.ie/surveys/how_many_ online/index.html (last visited March 15, 2000).

[12] *NUA Internet Surveys at* http://www.nua.ie/surveys/analysis/graphs_ charts/comparisons/how_many_online.html (last visited March 15, 2000).

[13] *See, e.g.*, Jessica Litman, *The Exclusive Right to Read*, 13 CARDOZO ARTS & ENT. L.J. 29 (1994).

[14] *See* MAI Sys. Corp. v. Peak Computer, Inc., 991 F.2d 511, 26 U.S.P.Q.2d (BNA) 1458 (9th Cir. 1993).

[15] 991 F.2d 511, 26 U.S.P.Q.2d (BNA) 1458 (9th Cir. 1993).

[16] 75 F. Supp. 2d 1290, 53 U.S.P.Q.2d (BNA) 1425 (D. Utah 2000).

[17] *See id.*

[18] *See MAI*, 991 F.2d 511, 26 U.S.P.Q.2d (BNA) 1458.

[19] *See, e.g.*, Litman, *supra* note 13, at 41-42; Jule L. Sigall, *Copyright Infringement was Never This Easy: RAM Copies and Their Impact on the Scope of Copyright Protection for Computer Programs*, 45 CATH. U.L. REV. 181, 182 (1995); Brian D. Wassom, *Copyright Implications of "Unconventional Linking" on the World Wide Web: Framing, Deep Linking and Inlining*, 49 CASE W. RES. L. REV. 181, 251 (1998).

[20] *MAI*, 991 F.2d at 513, 26 U.S.P.Q.2d at 1459.

[21] *Id.*

[22] *Id.*

[23] *Id.* at 518, 26 U.S.P.Q.2d at 1463.

[24] *Id.* at 517, 26 U.S.P.Q.2d at 1462-63.

[25] *Id.* at 517-18, 26 U.S.P.Q.2d at 1463. *See also* 17 U.S.C. § 101 (2000); 17 U.S.C. § 102 (1994) (stating that to be protected by copyright, a work must be "fixed in any tangible medium of expression," and defining "fixed" as "sufficiently permanent or stable to permit [the work] to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration").

[26] *MAI*, 991 F.2d at 519, 26 U.S.P.Q.2d at 1464 (quoting 17 U.S.C. § 101 definition of "fixed").

[27] *Id.*

[28] *See, e.g., supra* note 19; Katrine Levin, *MAI v. Peak: Should Loading Operating System Software into RAM Constitute Copyright Infringement*?, 24 GOLDEN GATE U.L. REV. 649 (1994).

[29] Sigall, *supra* note 19, at 182.

[30] *Id.* at 182.

[31] Levin, *supra* note 28, at 682.

[32] *See* Sigall, *supra* note 19, at 205-07 (discussing rejections of copyright misuse defenses in *Advanced Computer Services of Michigan, Inc. v. MAI Sys. Corp.*, 845 F. Supp. 356, 30 U.S.P.Q.2d (BNA) 1443 (E.D. Va. 1994) and *Triad Sys. Corp. v. Southeastern Express Co.*, 31 U.S.P.Q.2d (BNA) 1239 (N.D. Cal. 1994)). *But see* DSC Communications Corp. v. DGI Technologies, Inc., 81 F.3d 597, 38 U.S.P.Q.2d (BNA) 1699 (5th Cir. 1996) (affirming a preliminary injunction, in a fact pattern very similar to that of *MAI Sys. Corp. v. Peak Computer, Inc.*, based on the possibility of the defendant prevailing on the defense of copyright misuse).

[33] Levin, *supra* note 28, at 681.

[34] *See, e.g.*, Advanced Computer Services of Michigan, Inc. v. MAI Sys. Corp., 845 F. Supp. 356, 30 U.S.P.Q.2d (BNA) 1443 (E.D. Va. 1994); Marobie-FL, Inc. v. National Ass'n of Fire and Equipment Distributors and Northwest Nexus, Inc., 983 F. Supp. 1167, 45 U.S.P.Q.2d (BNA) 1236 (N.D. Ill. 1997); Religious Technology Ctr. v. Netcom On-Line Communication Servs., Inc., 907 F. Supp. 1361, 37 U.S.P.Q.2d (BNA) 1545 (N.D. Cal. 1995).

[35] 75 F. Supp. 2d 1290, 53 U.S.P.Q.2d (BNA) 1425 (D. Utah 1999).

[36] *Id.* at 1292, 53 U.S.P.Q.2d at 1426-27.

[37] *Id.*, 53 U.S.P.Q.2d at 1426.

[38] *Id.* at 1294, 53 U.S.P.Q.2d at 1428.

[39] Note that the situation of a Web user infringing the reproduction right simply by accessing pages that contain infringing material is a topic in itself; because it requires a great deal of attention, it will not be discussed further in this paper.

[40] 17 U.S.C. § 102(a) (1994).

[41] *See, e.g.*, Futuredontics, Inc. v. Applied Anagramics, Inc., 45 U.S.P.Q. 2d (BNA) 2005 (C.D. Cal. 1998) (denying defendant's motion to dismiss where the plaintiff sued for infringement of its derivative works right based on the defendant's display of the plaintiff's page in Web frames).

[42] *See, e.g.*, David L. Hayes, *Advanced Copyright Issues on the Internet*, 7 TEX. INTELL. PROP. L.J. 1, 92 (1998) (discussing *Ticketmaster v. Microsoft Corp.*, in which the plaintiff sued the defendant for copyright infringement for linking to pages "deep" within its site rather than its home page; the case was settled).

[43] *See* John Borland, *Rap Artist Sues Napster, Students*, CNET NEWS.COM (April 25, 2000), *at* http://news.cnet.com/news/0-1005-202-1760313.html.

[44] *See* U.S. Congress, Office of Technology Assessment, COPYRIGHT AND HOME COPYING: TECHNOLOGY CHALLENGES THE LAW, OTA-CIT-422 at 68, n. 22 (1989).

[45] *See, e.g.*, Shahram A. Shayesteh, *High-Speed Chase on the Information Superhighway: The Evolution of Criminal Liability for Internet Piracy*, 33 LOY. L.A. L. REV. 183, 217 (1999) (stating that "the fair use doctrine is inherently uncertain"); Jessica Litman, *Reforming Information Law in Copyright's Image*, 22 U. DAYTON L. REV. 587, 611 (1997) (stating that "fair use is a limited privilege that applies in particular cases only after a searching, fact-specific inquiry").

[46] Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 577, 29 U.S.P.Q.2d (BNA) 1961, 1965 (1994).

[47] *See, e.g.*, Harper & Row Publishers, Inc. v. Nation Enterprises, 471 U.S. 539, 565, 225 U.S.P.Q. (BNA) 1073, 1083 (1985) (refusing a fair use defense because the defendant copied the "heart" of the plaintiff's work).

[48] U.S. CONST. art. I, §8, cl.8.

[49] *See, e.g.*, Fox Film Corp. v. Doyal, 286 U.S. 123, 127, 13 U.S.P.Q. (BNA) 243, 244 (1932); Mazer v. Stein, 347 U.S. 201, 219, 100 U.S.P.Q. (BNA) 325, 333 (1954), United States v. Paramount Pictures, 334 U.S. 131, 158, 77 U.S.P.Q. (BNA) 243, 253 (1948); Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156, 186 U.S.P.Q. (BNA) 65, 67 (1975).

[50] MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT, § 1.03 (1978) (quoting *Fox Film Corp. v. Doyal*, 286 U.S. at 127, 13 U.S.P.Q. (BNA) at 244 (1932)).

[51] COPYRIGHT AND HOME COPYING, *supra* note 44, at 66.

[52] From this point forward, references to "RAM copies" apply only to RAM copies made by the process of browsing the Web, even if not specifically stated.

[53] *See generally* RONALD V. BETTIG, COPYRIGHTING CULTURE: THE POLITICAL ECONOMY OF INTELLECTUAL PROPERTY 79-115 (1996).

[54] *See id.* at 80.

[55] *See id.*

[56] *See id.* at 103-06.

[57] *Id.* at 104.

[58] *See id.*

[59] *See id.*

[60] *Id.* at 104 (quoting STANLEY M. BESEN, NEW TECHNOLOGIES AND INTELLECTUAL PROPERTY: AN ECONOMIC ANALYSIS 45 (1987)).

[61] *See, e.g.*, Glynn S. Lunney, Jr., *Reexamning Copyright's Incentives-Access Paradigm*, 49 VAND. L. REV. 483 (1996); BENJAMIN KAPLAN, AN UNHURRIED VIEW OF COPYRIGHT, 38-78 (1967); Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281 (1970).

[62] BETTIG, *supra* note 53, at 104.

[63] *See* Breyer, *supra* note 61.

[64] *See* Breyer, *supra* note 61.

[65] *See* Breyer, *supra* note 61, at 293-99.

[66] Breyer, *supra* note 61.

[67] Breyer, *supra* note 61, at 293-95.

[68] *See* BETTIG, *supra* note 53, at 105-06.

[69] BETTIG, *supra* note 53, at 106.

[70] *See* L. RAY PATTERSON & STANLEY W. LINDBERG, THE NATURE OF COPYRIGHT: A LAW OF USER'S RIGHTS 81-85 (1991).

[71] Act of Mar. 9, 1909, Pub. L. No. 349, § 320(a), 35 Stat. 1075 (1909) (current version at 17 U.S.C. § 106 (2000)).

[72] *See* PATTERSON & LINDBERG, *supra* note 70, at 81.

[73] PATTERSON & LINDBERG, *supra* note 70, at 81-82.

[74] *See* PATTERSON & LINDBERG, *supra* note 70, at 82-83.

[75] PATTERSON & LINDBERG, *supra* note 70, at 83.

[76] PATTERSON & LINDBERG, *supra* note 70, at 83.

[77] PATTERSON & LINDBERG, *supra* note 70, at 148-59.

[78] PATTERSON & LINDBERG, *supra* note 70, at 151 (emphasis omitted).

[79] PATTERSON & LINDBERG, *supra* note 70, at 151 (emphasis omitted).

[80] PATTERSON & LINDBERG, *supra* note 70, at 152.

[81] PATTERSON & LINDBERG, *supra* note 70, at 152.

[82] PATTERSON & LINDBERG, *supra* note 70, at 153.

[83] PATTERSON & LINDBERG, *supra* note 70, at 153.

[84] H.R. REP. NO. 94-1476, at 51-52 (1976).

[85] *Id.*

[86] *See* Litman, *supra* note 13.

[87] *See supra* note 45.

[88] *See, e.g.*, 17 U.S.C. § 108 (1994 & Supp. IV 1998) ("Limitations on exclusive rights: Reproduction by libraries and archives"); 17 U.S.C. § 110 (2000) ("Limitations on exclusive rights: Exemption of certain performances and displays").

[89] *See* 17 U.S.C. § 117 (1994 & Supp. IV 1998).

[90] Breyer, *supra* note 61, at 337.

[91] *See* 17 U.S.C. § 107(1) (1994).

[92] *See* Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 579, 29 U.S.P.Q.2d (BNA) 1961, 1965 (1994).

[93] *See id.*

[94] *See* 17 U.S.C. § 107(2) (1994).

[95] *See Campbell*, 510 U.S. at 586, 29 U.S.P.Q.2d at 1968.

[96] *See* 17 U.S.C. § 107(3) (1994).

[97] *See* 17 U.S.C. § 107(4) (1994).

[98] Harper & Row Publ'r, Inc. v. Nation Enter., 471 U.S. 539, 550, 225 U.S.P.Q. (BNA) 1073, 1076 (quoting ALAN LATMAN, FAIR USE OF COPYRIGHTED WORKS 15 (1958)).

[99] Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 449-50, 220 U.S.P.Q. (BNA) 665, 681 (1984).

[100] *See* NIMMER, *supra* note 50, § 10.03(A)(7) (citations omitted).

[101] *See* Effects Assocs., Inc. v. Cohen, 908 F.2d 555, 558, 15 U.S.P.Q.2d (BNA) 1559, 1561 (9th Cir. 1990).

[102] *See* April M. Major, *Copyright Law Tackles Yet Another Challenge: The Electronic Frontier of the World Wide Web*, 24 RUTGERS COMPUTER & TECH. L.J. 75, 90 (1998).

[103] Allen-Myland, Inc. v. International Bus. Mach. Corp., 746 F. Supp. 520, 549, 16 U.S.P.Q.2d (BNA) 1817, 1839 (E.D. Pa. 1990).

[104] *See* Jo Dale Carothers, *Protection of Intellectual Property on the World Wide Web: Is the Digital Millennium Copyright Act Sufficient*?, 41 ARIZ. L. REV. 937, 951 (1999).

[105] *See id.*

[106] Jane C. Ginsburg, *Authors and Users in Copyright*, 45 J. COPYRIGHT SOC'Y U.S.A. 1, 12 (1997).

[107] 464 U.S. 417, 220 U.S.P.Q. (BNA) 665 (1984).

[108] *See* Ginsburg, *supra* note 106.

[109] 17 U.S.C. § 117(c) (1994 & Supp. IV 1998) was added in 1998 as part of the Digital Millennium Copyright Act specifically to address the outcome in *M.A.I. Systems Corp. v. Peak Computer, Inc.* 991 F.2d 511, 26 U.S.P.Q.2d (BNA) 1458 (1993). Section 117(c) provides an exception from infringement for copies of a computer program made for maintenance or repair purposes.

[110] 17 U.S.C. § 117(a) (1994 & Supp. IV 1998).

[111] John M. Conley and Vance F. Brown, *Revisiting Section 117 of the Copyright Act: An Economic Approach*, 7 No. 11 COMPUTER LAW. 1, 3 (1990).

[112] *See id.* (quoting Pub.L. No. 93-573 §201(a), 88 Stat. 1373, Dec. 31, 1974).

[113] *See id.*

[114] Levin, *supra* note 28, at 673.

[115] 17 U.S.C. § 117(a)(2) (Supp. IV 1998) (emphasis added).

[116] Levin, *supra* note 28, at 676.

[117] *Id.* at 673.

[118] *Id.* at 674.

[119] *Id.*

[120] *Id.* at 676; Conley and Brown, *supra* note 113 at 3.

[121] *See* Major, *supra* note 102, at 93 (arguing that because Section 117 expressly limits itself to computer programs, fair use is a better choice of defense for the issue of infringement by RAM copies).

[122] Act of Oct. 19, 1975, Pub. L. No. 94-553, § 117, 94 Stat. 2541, 2565 (current version at 17 U.S.C. § 117 (Supp. IV 1998)).

[123] Carothers, *supra* note 104 at 949.

[124] 17 U.S.C. § 117(a)(1) (Supp. IV 1998).

[125] *See* Apple Computer, Inc. v. Formulation International, Inc., 594 F. Supp. 617, 622, 224 U.S.P.Q. (BNA) 560, 564 (1984).

[126] *See* Vault Corp. v. Quaid Software Ltd., 847 F.2d 255, 261, 7 U.S.P.Q.2d (BNA) 1281, 1287 (5th Cir. 1988).

[127] *Id.*

[128] *See id.*

[129] *See id.*

[130] *See* Conley and Brown, *supra* note 111 at 9.

[131] *Id.* at 1.

[132] *Id.* at 2, 11.

[133] *Id.* at 12.

[134] *See* Levin, *supra* note 28, at 671; Conley and Brown, *supra* note 111, at 12.

[135] *See* Conley and Brown, *supra* note 111, at 3.

[136] *See* Carothers, *supra* note 104, at 1.

[137] *Id.*

[138] *See* Jane C. Ginsburg, *Putting Cars on the "Information Superhighway": Authors, Exploiters, and Copyright in Cyberspace*, 95 COLUM. L. REV. 1466, 1489 (1995).

[139] *Id.*

[140] *See id.* at 1492.

[141] *See id.*

[142] *Id.*

[143] *See, e.g.*, Litman, *supra* note 13, at 32-33 (arguing that "vesting copyright owners with control of any reproduction or transmission of their works [which would] include any appearance, even a fleeting one, of a protected work in any computer ... would enhance the exclusive rights in the copyright bundle so far as to give the copyright owner the exclusive right to control reading, viewing, or listening to any work in digitized form.").

[144] *See* David Nimmer et al, *The Metamorphosis of Contract into Expand*, 87 CAL. L. REV. 17, 22 (1999).

[145] *But see* Mark A. Lemley, *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 CAL. L. REV. 111, 136-51 (1999) (expressing concern that "courts may not use contract preemption to solve all of the problems that unrestrained enforcement of contracts would create for intellectual property law." *Id.* at 150.).

[146] *See* Eric Schlachter, *The Intellectual Property Renaissance in Cyberspace: Why Copyright Law Could be Unimportant on the Internet*, 12 BERKELEY TECH. L.J. 15, 39 (1997).

[147] *See id.*

[148] *See id.* at 39-40.

[149] *See id.*

[150] *See id.*

[151] *See id.* at 41-43.

[152] *See id.* at 41.

[153] *See id.*

[154] *See id.* at 42.

[155] Diane Leenheer Zimmerman, *Copyright in Cyberspace: Don't Throw Out the Public Interest with the Bath Water*, 1994 ANN. SURV. AM. L. 403, 412-13 (1994).